

AMENDMENTS TO THE SPECIFICATION:

Please amend the specification as follows:

At paragraph [6]

--[6] The relevant patent is U. S. Patent Nos. 4,300,806, 5,915,841, 5,988,885, 4,465,384, 5,498,083, 5,584,582, 6,024,491, 6,190,048B1, 4,624,583, 3,893,733, 3,809,443, 4,178,046, 4,654,939, 4,005,914, 5,911,511, ~~5,534,723~~ 5,634,723, 5,427,455, and 5,866,518.--

At paragraph [17]

--[17] A bump foil bearing according to one embodiment of the invention is a general type of bearing as shown in FIG. 2. The bump foil bearing of the invention comprises a top foil [[1]] (1), a key [[2]] (2), an inner bump foil [[3]] (3), an outer bump foil [[4]] (4), a bump sheet [[5]] (5), a housing [[6]] (6), and a key groove [[7]] (7).--

At paragraph [18]

--[18] A fine gap exists between the shaft and the top foil [[1]] (1). The surrounding air or gas serves as a lubricant oil. The top foil [[1]] (1) exhibit another form rather than a circle, due to a pressure caused by the air flow generated from the rotation speed of the shaft, thereby further increasing its supporting force. Therefore, the rigidity of the bump foils [[3]] (3) and [[4]] (4) and the thickness of the top foil [[1]] (1) is of importance in determining the supporting force thereof. The behavior of the bump foil, which supports the top foil [[1]] (1), determines the supporting power and stability. In addition, the performance relies upon the characteristics of the bump foils [[3]] (3) and [[4]] (4), which supports the top foil [[1]] (1). Therefore, the present invention is intended to improve the performance and economical efficiency by changing the structure of the bump foils [[3]] (3) and [[4]] (4) and the top foil [[1]] (1).--

At paragraph [19]

--[19] The thickness of the top foil is made to be adequately thicker than the conventional case (0.1t in case of a bearing having a diameter of 60mm), such that a lathe machining and

an inner diameter grinding can be performed. Therefore, the productivity and the precision can be improved, and the shape of the bearing can be maintained at a lower rotation speed so that the frictional load can be alleviated to thereby reduce its wearing-out. Also, the high-temperature distortion can be decreased to thereby reduce the extent to be cooled. That is, the thickness of the top foil [1] (1) is made to become above

$$t \geq 0.1 \cdot D^{0.33}$$

(t: the thickness (mm), D: the diameter of the shaft (mm)), so that the performance and productivity therefore are enhanced. In addition, the inner diameter grinding of the top foil can be carried out. Therefore, in case where a metallic dry lubricant is used, the lubricant is sprayed in the inner diameter of the top foil using a plasma melt-spraying process, or the like and then ground, thereby avoiding a difficulty that a dry lubricant having a strong adhesiveness must be developed and sprayed in the outer diameter of the shaft, which is then ground. In this way, in order to achieve a high performance by making the top foil [2] (2) thicker, a bump foil having a good characteristic in a wide range of load must be used together.--

At paragraph [20]

--[20] The bump foils [3] (3), [4] (4) to be used together with the thicker top foil [1] (1) can transfer the load uniformly to the top foil [1] (1), even in case where the number thereof is low (the pitch thereof is large). Therefore, a high inner bump foil and a low inner bump foil are alternately disposed in such a way that the outer bump foil [4] (4) is placed under the high inner bump foil [3] (3) only. Consequently, it can have a three-step variation effect of rigidity, although a two-layer structure is used. As the bump foil is pressed, the rigidity does not vary linearly. That is, its structure is configured such that the rigidity can be increased in the form of an equation of the second or third degree, thereby providing stability in a wide range of rotation frequency.--

At paragraph [21]

--[21] The inner bump [[3]] (3) is formed of a higher one and a lower one alternately arranged. Thus, as the top foil is pressed, the rigidity is increased in a two-step fashion. As the top foil [[1]] (1) is further pressed, the outer bump foil [[4]] (4) is also pressed so that the rigidity can be increased in a three-step mode. The height of the outer bump foil [[4]] (4) is similar to the lower one of the inner bump foil [[3]] (3), and thus the thickness can be increased in order to increase the rigidity thereof.--

At paragraph [22]

--[22] As described above, the rigidity of the bump foils [[3]] (3) and [[4]] (4) is varied in a three-step way so that a high and low load can be supported. Due to the damping effect caused by the rigidity and the three-step nonlinearity of rigidity, stability can be secured, thereby enabling the operation near the critical speed. The outer bump foil [[4]] (4) is disposed at the larger pitch of the inner bump foil [[3]] (3) so that the assembling precision can be lowered and the number of processes for assembling to the inner diameter of the housing [[6]] (6) can be reduced, thereby enhancing productivity. Since the top foil has a thick thickness, it can be used up to the critical temperature, thereby improving the efficiency thereof. It is because the rigidity of the thick foil itself eliminates the high-temperature distortion, and thus cooling is not or less required. In consequence, the present invention overcomes the disadvantages in the prior art that the convention foil bearing is expensive, cannot be mass-produced, and cannot be easily applied to a high- temperature application. Thus, according to the invention, the foil bearing can be used widely in the industrial or civilian machines.--

At paragraph [23]

--[23] Another advantage by the thicker top foil is that the top foil itself can maintain its shape, and thus the top foil and the bump foil does not need to be welded directly to the housing, thereby providing a simplified structure. The inner bump foil [[3]] (3) and the outer bump foil [[4]] (4) are simply spot-welded to the bump sheet [[5]] (5), which then only has to be assembled to the housing [[6]] (6), along with the top foil [[1]] (1). Simply, the key [[2]] (2) is welded and fixed to the top foil [[1]] (1) and the housing [[6]] (6) has a key groove [[7]] (7) in order to prevent its rotation. Consequently, the difficulty in the conventional one,

where all the components must be welded to the inner diameter of the housing [[6]] (6), is overcome, thereby increasing productivity.--